

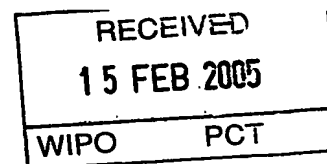
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference	FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/EP2004/002191	International filing date (<i>day/month/year</i>) 04.03.2004	Priority date (<i>day/month/year</i>) 21.03.2003
International Patent Classification (IPC) or national classification and IPC G01N33/82, G01N33/52		
Applicant UNILEVER PLC et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 16.08.2004	Date of completion of this report 11.02.2005	
Name and mailing address of the international preliminary examining authority: <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div>	Authorized Officer Komenda, P Telephone No. +49 89 2399-2777 <div style="text-align: right;"> </div>	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/002191

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-6 as originally filed

Claims, Numbers

1-14 as originally filed

Drawings, Sheets

1/1 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/002191

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Section V:

Reference is made to the following documents:

D1 = US-A-4 303 409

D2 = US-A-3 771 964

D3 = US-A-4 303 408

- N:** Document D1 represents the nearest available prior art and reveals a sensor for ascorbic acid comprising sensor means for detecting ascorbic acid and buffer means of pH 3 to 6.5 for buffering the sample and for avoiding interference from uric acid (see column 3, lines 4-31). It should be mentioned here that at acidic pH uric acid is present in its acid form.

The sensor of claim 1 differs from that of D1 in that the buffer means comprise two zones, a first zone which contacts the sample first and comprises filter means and buffering means to a pH of from 5.5 to 8 and a second zone for receiving the sample which has passed through the first zone and for buffering it to a pH from 1 to 5 (Article 33(2) PCT).

The same distinguishing feature is also present in claims 2-13 and independent method claim 14 using the sensors of claims 1-13.

- IA:** The technical effect of the above distinguishing feature is to avoid interference from uric acid. Note that D1 already reveals a solution for avoiding interference from uric acid.

The technical problem to be solved is thus to provide another, alternative sensor for ascorbic acid which does not suffer from uric acid interference.

At the indicated pH range of the first buffer zone of the claimed sensor, uric acid is present in its salt i.e. urate form, which is only fairly soluble in aqueous solution and which can thus be separated from the sample by filtration. The fact that uric acid changes into its urate form at a particular pH belongs to the textbook knowledge of the chemically skilled person and is also confirmed in D2 where it is recommended that in order to avoid interference from urate when determining ascorbic acid in urine, the pH of the test specimen should be lowered (column 2, lines 1-45).

Document D3 describes a multizone element, at least one zone being an interferent removal zone and another being an indicator zone (see column 3, lines

10-22). The functioning principle of the interferent removing zone is to extract from the sample the interferents to the respective assay (claim 1, example 10).

Moreover, the interferent removal zone may contain a buffer (claim 9). Uric acid is also mentioned as interferent (column 4, lines 29-32).

Presented with the above problem of finding another solution for avoiding uric acid interference and knowing from conventional text books about the urate/uric acid equilibrium the skilled person would be able to apply the teaching of D3 to a sensor as disclosed in D1 by providing an additional interferent removal zone comprising a filter and a buffer in the urate pH range to the test strip and in doing so he would arrive at the subject-matter of claim 1 without any need to perform an inventive step (Article 33(3) PCT).

The use of an obvious sensor in a method of detecting ascorbic acid as presently defined in claim 14 is also considered obvious for the skilled man.

The features of the dependent claims do not appear to add anything inventive to the claims to which said dependent claims refer, since they appear to relate to conventional measures which are also known from either D1 or D3 (see e.g. the vertical arrangement of the zones, D3 column 3, lines 60-64).

IA: Industrial applicability is acknowledged (Article 33(4) PCT).

Section VII:

1. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).